

www.e-rara.ch

A general natural history

A history of plants

Hill, John

London, MDCCLI [1751]

ETH-Bibliothek Zürich

Shelf Mark: Rar 2575

Persistent Link: <https://doi.org/10.3931/e-rara-20218>

Part II. Cryptogamia.

www.e-rara.ch

Die Plattform e-rara.ch macht die in Schweizer Bibliotheken vorhandenen Drucke online verfügbar. Das Spektrum reicht von Büchern über Karten bis zu illustrierten Materialien – von den Anfängen des Buchdrucks bis ins 20. Jahrhundert.

e-rara.ch provides online access to rare books available in Swiss libraries. The holdings extend from books and maps to illustrated material – from the beginnings of printing to the 20th century.

e-rara.ch met en ligne des reproductions numériques d'imprimés conservés dans les bibliothèques de Suisse. L'éventail va des livres aux documents iconographiques en passant par les cartes – des débuts de l'imprimerie jusqu'au 20e siècle.

e-rara.ch mette a disposizione in rete le edizioni antiche conservate nelle biblioteche svizzere. La collezione comprende libri, carte geografiche e materiale illustrato che risalgono agli inizi della tipografia fino ad arrivare al XX secolo.

Nutzungsbedingungen Dieses Digitalisat kann kostenfrei heruntergeladen werden. Die Lizenzierungsart und die Nutzungsbedingungen sind individuell zu jedem Dokument in den Titelinformationen angegeben. Für weitere Informationen siehe auch [Link]

Terms of Use This digital copy can be downloaded free of charge. The type of licensing and the terms of use are indicated in the title information for each document individually. For further information please refer to the terms of use on [Link]

Conditions d'utilisation Ce document numérique peut être téléchargé gratuitement. Son statut juridique et ses conditions d'utilisation sont précisés dans sa notice détaillée. Pour de plus amples informations, voir [Link]

Condizioni di utilizzo Questo documento può essere scaricato gratuitamente. Il tipo di licenza e le condizioni di utilizzo sono indicate nella notizia bibliografica del singolo documento. Per ulteriori informazioni vedi anche [Link]

THE HISTORY OF PLANTS.

PART II.

CRYPTOGAMIA.

Plants of, or approaching to, the figure of what are called the more perfect ones, but whose parts of fructification are not distinct or obvious.

SALVINIA.

SALVINIA is a genus of plants, producing separate male and female flowers, on the different parts of the same individual.

The male flowers are very numerous, and stand on the surface of the leaves. They have neither calyx nor corolla, but consist of an obtusely conic body, supplying the place of a filament, on which there are placed four antheræ: these are erect, oblong, and slender, pointed at the end, and twisted spirally all the way up.

The female flower has neither cup nor corolla. The fruit is of a roundish figure, and contains four distinct cells, in each of which are contained several roundish seeds.

Linnaeus calls this genus *Marsilea*; but, that being a name already given by Micheli to another very different genus of plants, we have thought it more proper to retain to this genus the original name *Salvinia*, given it by the same Micheli.

This genus comprehends the *Salvinia* of Micheli, and the *Pilularia* of Dillenius.

1. *Salvinia foliis brevibus obtusis.*

Short, obtuse-leaved Salvinia.

The root of this species is fibrous, and the fibres hairy; the stalks are simple, and about four or five inches long: they are round, hairy, and solid. The leaves stand in pairs; they are oblong, very broad, and obtusely pointed; their pedicles are very short and thick, and, from the same part of the stalk whence every pair of leaves issues, there also proceeds a cluster of roots adhering to an oblong head.

The leaves are even at the edges, somewhat cordated at the base, and of a bright green colour. Their surface appears punctated from the frequency of the male flowers.

These

These stand in rows very near one another, proceeding from the middle rib to the edge. Each way there are twenty, or more, of these rows on every leaf, on each side the rib. The fruit grows in a very different place; it adheres to the lower end of the head of every cluster of roots, and is every way surrounded and covered by the fibres.

It is an aquatic plant, and is very common in brooks, ditches, and ponds about Pisa, in the Auxerre, about the foot of mount St Julian, and in many other places; but we have it not in England: it floats upon the water. It has been long known among the botanical writers, tho', till Micheli, nobody was at the pains to find out it's fructification. C. Bauhine calls it, *Lenticula palustris, latifolia, punctata*. J. Bauhine, *Lens palustris Patavina*.

2. *Salvinia foliis junceis.*
The rush-leaved *Salvinia*.

Pepper
Grass.

This species does not at all resemble the former in it's external figure. It sends out long, simple, round flagellæ, of the thickness of a small packthread, which creep along the surface of the ground; these are five or six inches long; at every inch, or thereabout, there is sent downwards a root, consisting of three or four simple fibres, and from the same part of the flagellum upward as many leaves. The leaves stand erect, and are two, three, or four inches long; they are round like rushes, and of the thickness of a small packthread, largest at the leaf, and gradually smaller, till they terminate in a point.

In the alæ of these leaves stand the capsules; they are affixed to the flagellum by very short pedicles, and are at first oblong, afterwards more tumid and rounder; they are covered with a brown, hairy membrane: when cut asunder, they shew four cells; but, if suffered to grow to the full maturity, they separate into four parts, in each of which are contained a great number of small, roundish seeds.

This species grows in marshy grounds, and is not uncommon with us, but it's resemblance to grass makes us overlook it. It is common on Hounslow-heath, and in many parts of Surry and Suffex. Vaillant and Dillenius call it, *Pilularia*. Ray, *Graminifolia palustris, repens, vasculis granorum piperis æmulis*. Merret, *Gramen piperinum*. Plukenet calls it, *Muscus aureus, capillaris, palustris, folliculis rotundis quadripartitis*.

L E M N A.

LEMNA is a genus of plants, producing distinct hermaphrodite and female flowers, on the same plant. In the hermaphrodite flowers the calyx is monophyllous, and of a roundish figure, and opens sidewise; it is dilated obliquely outwards, and is large, expanded, obtuse, and not divided at the edges. There is no corolla, but in this calyx there stand two subulated, crooked filaments, of the length of the cup, and on these double globose antheræ. In the female flower there is no corolla; the calyx is the same as in the other. The germen of the pistil is of an oval form; the style is short and permanent, the stigma simple. The fruit is a capsule rounded, but terminating in a point, and contains only a single cavity; in this are lodged a small number of seeds of an oblong figure, pointed at each end, and striated on one side.

This genus comprehends the *Lenticula* of Dillenius, &c. and the *Hydrophace* of Buxbaum.

1. *Lemna folio subrotundo monorrhiza.*
The roundish-leaved, single-rooted *Lemna*.

Duckweed.

This is the species of *Lemna* most frequent in our standing waters, and often covers them entirely. It's leaves are of an irregularly rounded figure, and of about a sixth of an inch in diameter. Each plant properly consists of a single leaf, from the center, or near the center, of which descends a single fibre, by way of root. The leaf is green on both the upper and under sides. The hermaphrodite flower is produced from one side of the leaf; the female flower, from the opposite part on the other side. Both flowers are of a whitish green in colour, but the calyx does not remain long to either; so that it is more usual to see only the stamina and pistil. The root is an

an inch and half in length, and at it's bottom has a conic case, which falls off, as it grows old or decays. This species flowers in June, and it is at that time only that the flowers are to be expected to be seen perfect: the stamina and pistil remain, indeed, till the end of July; and the seed-vessel may be found till winter. A thousand places may be searched, before a single plant of this is found in flower; but the most probable for it's flowering are, where there is most sun, and greatest plenty of water. The botanical writers have described this under the names of *Lens palustris*, and *Lenticula palustris vulgaris*.

2. *Lemna folio oblongo monorrhiza.*

The oblong-leaved Lemna, with a single root.

This consists of a single leaf, and single root, as the former. The leaf is of an oblong figure, obtuse at each end, and broadest near the middle; it is moderately thick, and something larger than the leaf of the former species, or at least it is full as broad, with more length; it is of a pale green, both on the upper and under sides. The root proceeds from nearly the middle of the leaf, and is a single white fibre, of two inches and a half, or more, in length, covered, at it's extremity, with a conic case as the others.

This is less frequent than the former species. I have met with it plentifully in Wiltshire. It's flowers are as in the former. Matthiolus has a figure of it, but without a distinct name. Micheli calls it, *Lenticularia media, monorrhiza, foliis oblongis utrinque viridibus*.

3. *Lemna foliis latis ovatis polyrrhiza.*

The many-rooted, broad, oval-leaved Lemna.

This is the largest of all the simple Lemnæ. It's leaf is twice or three times as large as that of the common Lemna, of an oval or pear-fashioned shape, very large, and broad at one end, and small at the other; it is considerably thick, and of a bright green colour on the upper side, and of a fine purple underneath. Every leaf has, instead of a single fibre, by way of root, ten, twelve, or more, but they are short, seldom exceeding an inch in length: each of them has it's conic case at the end, and they all rise near one another, and that nearly in the middle of the leaf.

This species is very common in our standing waters, with the ordinary Lemna. It's flowers are produced from the two sides of the smaller part of the leaf, near the extremity. Commelin calls this species *Lenticula palustris major*. J Bauhine, *Lens palustris, superne virens, inferne nigricans*; his description only is to be regarded, however, for the figure does not express it.

4. *Lemna folio ovato monorrhiza.*

The single-rooted, oval-leaved Lemna.

The leaf of this species is exactly of the shape of that of the former, very large and rounded at one end, and very small, but rounded also, at the other; there is also a sort of neck between the two parts, somewhat distinguishable in the former, but more so in this. This is of a pale green on the upper side, and of a yet paler or whitish green on the lower; very thick and fleshy; more so, indeed, than any other species, and very prominent on the under side: from the center of this leaf issues a single fibre, longer than that of any other species; three inches is a common length, sometimes it is much more. This species is less frequent than the others, but it flowers more constantly than any of them. I have observed it in the ponds on Putney-heath, where it is common to find it in flower in July. It is described, in the *Flora Altdorffensis*, under the name of *Lenticula aquatica foliis minoribus inferna parte in vesiculam ductis*. Micheli calls it, *Lenticula palustris major, inferne magis convexa, fructu polyspermo*.

5. *Lemna*

5. *Lemna folio ovato arrhiza.**The oval-leaved Lemna, with no root.*

This is the smallest of all the Lemnæ; it floats on shallow waters, and consists of a single leaf, not exceeding the size of the head of a large pin, but of an oblong oval figure. It is somewhat convex on the under side, and whitish; on the upper side it is of a pale green. The flowers are produced from the opposite sides of the smaller end of the leaf, and, from the opposite end, there frequently grows a single new plant; this is so fixed to the old one, that it leaves a hole in it on separating. This species is common on standing waters, in the fens in Lincolnshire. Micheli calls it, *Lenticularia omnium minima arrhiza*.

6. *Lemna pediculata ramosa foliis oblongis.**The ramose, pediculated Lemna, with oblong leaves.*

This is so different in its appearance from the other Lemnæ, that nothing but a careful examination can instruct people that it belongs to the same genus; the others all float loose upon the water, this is originally rooted in the mud, though it can support itself very well loose too. It rises with a single, round, smooth stalk. At the height of an inch, or somewhat more, from the base, this produces a single leaf, and, from the origin of that leaf, it divides itself into two parts: each of these, at the distance of half an inch, produces its leaf, and divides again, and so on; so that, from one stem, a cluster of a hundred, or more, ramifications is soon formed. Though the leaves which stand at the divisions of the branches are single, at the extremities it is always otherwise; there are there always three leaves, growing together in an odd manner, two growing from the lower part of the principal leaf, and making, with it and its pedicle, a kind of a figure of a cross. The leaves are about a third of an inch in length, and half as much in breadth, and of a pale green. From all parts of the plant there are sent down roots, perfectly like those of the other Lemnæ; they are single, very slender filaments, white, hollow, and covered with the same kind of conic case, at the extremity, as those of the other Lemnæ.

This singular species is not uncommon about London, in little ponds. I have found it abundantly in one by the side of the common foot-way to Hampstead. C. Bauhine calls it, *Lenticula aquatica trifulca*; Lobel, *Hederula aquatica*.

Beside these six distinct species of the Lemna, there are two varieties which have so singular an appearance, that they may easily be mistaken for distinct species also: these are a very small, oblong, and thick-leaved kind, and a larger, roundish, and thin-leaved one. The first of these is a variety of the Lemna folio oblongo monorrhiza, owing to too much sun and too little water: the other, of the Lemna folio ovata monorrhiza, owing to too much shade. Micheli mentions them as distinct species; he calls the first *Lenticula palustris, minima, atrovirens, utrinque pene convexa*; and the other, *Lenticula palustris, media, pallide virens, inferne minus convexa, radicibus longissimis, fructu dispermo*. The number of seeds in the capsules of this genus is unlimited, and varies occasionally in the different plants of the same species; all the rest of the difference is owing to the different degree of shade and sunshine, and different quantity of water.

The common Lemna is recommended, by many authors, as a refrigerant and astringent. Bates tells us, also, of a wonderful cure performed by an infusion of it in wine, in an obstinate jaundice.

C H A R A.

C H A R A is a genus of plants, with hermaphrodite flowers. The calyx is very small, and composed of two leaves: there is no corolla, nor any filament, but a single anthera, of a globose figure, is affixed to the receptacle. The germen of the pistil is oval; there is no style, but there are three broad stigmata. The seed is single, and of an oblong oval figure.

Dillenius has called this genus *Hippuris*; others have confounded the species of it with the equisetæ, or horsetails. Vaillant first described its characters, but not exactly as they are found: he mentions a monopetalous corolla, and a capsular pericarpium; Linnæus does not allow them.

1. *Chara caulibus lævibus.**The smooth-stalked Chara.*

The root of this species is fibrous; it penetrates perpendicularly into the ground, to the depth of three or four inches: from this arise several stalks, which are round, slender, and smooth, but longitudinally and somewhat obliquely striated: they are geniculated and procumbent, usually spreading themselves several ways along the surface of the mud under water, with only the tops bending upwards. These stalks are from six inches to a foot, or more, in length, and they send out several branches; and these, as well as the main stalk, send out, at the several joints, numbers of small, oblong leaves, divided at the extremities, and terminating in points. The seeds are brown, small, and of an oval figure, and glossy surface, and they lie naked. The whole plant is of a greyish-green colour, while in the water; and of a whitish-grey, when dried. It is of a disagreeable smell and taste, and so brittle, that it is easy to rub it to pieces between the fingers, or even to crumble it to powder.

It is common in ditches and standing waters about London: it grows principally in muddy places, under three or four feet water. Linnæus calls it, *Chara vulgaris*, in his *Flora Laponica*; C. Bauhine, *Equisetum foetidum sub aquis repens*; Vaillant, *Chara vulgaris foetida*.

2. *Chara aculeis caulinis ovatis.**The oval, prickled Chara.*

This species loves standing waters, and grows sometimes at five, six, or more feet depth. Its root is composed of a vast number of fibres: its stalks are numerous, six, eight, or more, from one root; they are round, geniculated, lightly striated, and armed at the joints with robust and thick spines. They grow to a foot, or eighteen inches, in length, when in deep water; where it is shallower, they sometimes do not grow to more than five or six inches. The joints are beset with numbers of narrow, oblong leaves, and, toward the tops, are much thicker than elsewhere. The whole plant is of a greyish colour. It is extremely brittle, and, when taken into the mouth, it feels gritty and hard, like the corallines.

This is frequent in the little ponds in Essex and Kent, and in many other places. Bobart calls it, *Equisetum fragile, majus, subcinereum, aquis immersum*; and Johnson, *Hippuris coralloides*.

3. *Chara aculeis caulinis capillaribus.**The capillary, prickled Chara.*

The root of this is a small tuft of fibres. Its stalks are numerous, procumbent, round, and geniculated; they are armed with a great number of long and slender spines, and are less brittle than those of the two former, though very easily broken. They do not grow to more than eight or ten inches in length, and are of a greyish-green colour; the leaves are very slender, oblong, pointed, and stand thick at the joints. The whole plant is procumbent, and of a greyish-green colour.

This species is found in many parts of Ireland, and in some of the western counties of England, but not about London. It grows in shallow waters with muddy bottoms. Vaillant calls this, *Chara major caulibus spinosis*. Bobart, *Hippuris muscosus cauliculis spinulis crebrius exasperatis*.

We have, beside these three species, 1. The six-leaved Chara, or gritty *Equisetum* of Gesner. 2. The little Chara, with very slender stalks and leaves; and, 3. The little, pellucid, flexile Chara, with very numerous seeds: all common in our ditches about London.

EQUISETUM.

EQUISETUM is a genus of plants, the parts of fructification of which are so little distinguishable, that its general structure is necessary to be called in to establish the character. Its root is long and creeping. The plant consists of stalks, in some simple, in others branched, or producing setæ, called by some leaves, but really

really of the same structure with the rest of the plant; in all hollow, and made up of several joints, or short tubes, inserted into one another like so many cups.

All we are able to distinguish, as to the fructification, is, that the parts of it are arranged into a kind of spike, of an oblong oval form, and are orbicular in figure, and peltated, and that they divide irregularly, and in various angles from the base. Many very eminent authors say that these flowers are produced on some plants, and, on others of the same species, seeds naked, or without capsules; but this arises from the error of confounding the charæ with the equisetæ, and supposing them to have male plants with spikes of flowers, which is not the case.

Most of the botanical writers have called the several species of this genus by the proper name of Equisetæ, but they have also, in general, comprehended under it the several species of two other distinct genera, the chara and the hippuris.

1. *Equisetum durius caule nudo scabro.*

The hard, naked Horsetail.

The root of this species is long, slender, roundish, and creeping; of a dusky colour, and insipid taste. It creeps a long way under the surface of the earth, and sends up, at several parts, the plants. The stalk is simple, rounded, largest at the base, and gradually smaller to the top, where it terminates in an obtuse point. It is of a dusky purplish colour, inclining to blackness at the base, but, in all other parts, of a pale whitish green. It grows to two or three feet in height, usually, without the least rudiment of leaf or branch in any part, a mere straight, single column; its surface is deeply striated, and the whole stalk is composed of a number of short tubular joints, inserted into one another.

When in the state of fructification, the top of the stalk is terminated by an oblong oval spike, three quarters of an inch in length, and more than a third of an inch in diameter. This is brown, hard, and formed of little roundish peltæ: in this state, also, the plant sometimes pushes forth a kind of little leaves at the joints, toward the top of the stalk; and sometimes a single twig arises from some one of the lower joints, but this is more rare. The whole plant is extremely hard and harsh to the touch, and it continues fresh the whole year. It grows in wet, boggy places, in some parts of England, but more frequently in Germany. Our workmen use it very much in smoothing their works in wood, ivory, &c. they call it *Rush*, and *Shavegrass*; it will even take effect upon brass and iron. C. Bauhine calls it, *Equisetum foliis nudum, non ramosum, five junceum*.

2. *Equisetum caule crasso, verticillis densissimis, setis simplicibus.*

The thick-stalked Equisetum, with very thick-set, simple setæ.

This is a very stately plant, and is by much the largest of the Equisetum kind. Its roots are fibrous, and spread horizontally, under the surface of the ground. From these, in several places, rise the stalks; they grow to be three, four, or five feet high, and of near half an inch in diameter. They are round, hollow, and white in colour, and are composed of a number of short tubular joints, inserted into one another. They are smooth on the surface, or, at the utmost, so lightly striated, that it is scarce discernible. At every joint of the stalk there grow a vast number of setæ; these are green, of the thickness of a packthread, striated, and not branched, but composed of joints, in the manner of the main stalk; these are nine or ten inches long, and from twenty to thirty of them are produced at every joint, so that the whole plant makes a very beautiful figure. It is not uncommon to see a thousand, or more, of these plants growing together, in which case they make a very singular and very pretty appearance. The stalks, as they grow old, often lose their white colour, and turn of a dusky blackish-purple, especially on the side next the sun.

We have this species in our woods, and in other wet places, not unfrequently; where it produces its fructifications, they stand on naked stalks, in large oval spikes. C. Bauhine calls this, *Equisetum palustre longioribus setis*; others, *Equisetum palustre majus*.

3. *Equisetum*

3. *Equisetum setis simplicibus internodia vix superantibus.*
The short and single-branched Equisetum.

The root of this species is of the thickness of a packthread, jointed, and creeping. It runs a vast way under the surface, and sends down fibres, in considerable numbers, at every joint. Its stalks are green, slender, and very deeply striated. From every joint there grow six, eight, or ten setæ, green like the stalk, and, like it, composed of several tubular joints, fitted into one another. These setæ are short, scarce longer than the joints of the main stalk. When the plant flowers, the spike stands not upon a naked stalk, as in most, but on the top of the perfect plant. It is not unfrequent with us in rotten, boggy ground. C. Bauhine calls it, *Equisetum palustre brevioribus setis*; others, *Equisetum palustre minus*.

There are, beside these species, 1. The soft-stalked, naked Horsetail. 2. The corn-field Horsetail, with long setæ, sometimes sending out secondary ones. 3. The small, naked, variegated, Brazilian Horsetail; this grows also in England. 4. The wood Horsetail, with very slender, ramose, setæ. 5. The marsh Horsetail, with very long and very slender setæ. 6. The little, marsh Horsetail, with short setæ, and numerous heads. 7. The marsh Horsetail, with very long, slender setæ. 8. The branched, rushy Horsetail.

F I C U S.

FICUS is a genus of plants, differing, as has been supposed, from all others, in that its parts of fructification are inclosed within the body of what we call the fruit. Microscopic observations, however, have shewn us many parallel instances among the fungi, delivered in their proper place. The Ficus produces both male and female flowers separate, and in the different parts of the fruit, the outer part of which is properly the common calyx.

This is large, fleshy, of a turbinated figure approaching to oval, hollow, and close with numerous serrated and crooked squammulæ of a semi-lanceolated figure. The inner surface of this cup is every-where covered with floscules; the exterior ones, or those nearest the margin of the calyx, are the male flowers, and are few in number; the others are female ones, and are much more numerous.

The male flowers stand each on its own peduncle: the cup is a perianthium, erect, divided into three, four, or five parts, lanceolated in figure, equal in size, and erect. There is no corolla. The stamina are three filaments, slender, and of the length of the cup. The antheræ are double: there is among these a crooked and perishing rudiment of a pistil.

The female flowers also stand each on its own separate peduncle; in these the calyx is a perianthium, divided into five lanceolated-pointed segments, nearly equal in size, and erect. There is no corolla. The germen of the pistil is oval, of the size of the perianthium. The style is subulated, bent, and grows from one side of the germen, not from its point. The stigmata are two in number, both bent back and pointed, but one longer than the other. There is no pericarpium to this flower, but the cup contains the seed, which is single and roundish.

1. *Ficus foliis palmatis.*
The Fig-tree, with palmated leaves.

The Fig-Tree.

This grows to fifteen or twenty feet high, and sends out a number of long and large branches, naturally spreading a great way. Its trunk is as thick as a man's thigh, or more, and does not rise erect, but is usually tortuous. Its bark is smooth, while it is young, but, in the old branches and trunk, somewhat rough. The wood is white, soft, and scarce fit for any use. The leaves are very large, and of a palmated figure, divided into five parts: they are rough to the touch, and of a deep green colour. The fruit, in which are contained all the parts of fructification, arises near the setting on of the leaves; it is green, at first, but purplish, when ripe, and full of large roundish seeds. The unripe fruit, or the tender bark, or young leaves, wounded, emit a milky juice of an acrid and bitter taste. The whole fruit in this tree is properly the common calyx of the fructification.

This Fig-tree is a native of Italy, Spain, and many parts of the East. With us it is cultivated in gardens, and thrives perfectly well in the open air, unless a very severe winter happen.

It is singular, in regard to this tree, that the fruit, in general, contains both male and female flowers, and yet some trees of the same species contain in their fruit only male flowers, and others only female ones.

Botanical writers, who have not been aware of this, have described these *lusus naturæ*, in the same species, as two separate ones; the male quite distinct from the common Fig-tree, though, in reality, it is no more than the extraordinary state of that tree.

The Fig-tree with only male flowers in the fruit is called, by C. Bauhine, and others, *Caprificus* and *Erinosyche*; by Pontedera, *Caprificus præcox fructu nigricante, parvo, deciduo*. They agree to call that with only female flowers, *Ficus communis*, as well as the hermaphroditic kind. The Greeks tell us strange things of what they call the caprification of Fig-trees: they affirm, that, unless the fruit of the *Caprificus* be hanged on the branches of the common Fig-tree, its fruit will not ripen, but decay and fall off. We had been used for a long time to wonder at, if not to laugh at, this account; at length, Tournefort, travelling over the part of the world where the people lived who wrote of it, found the practice not only still continued, but absolutely necessary: he attributes the ripening of the figs, by means of this caprification, or hanging the fruits of the *Caprificus* on the branches, to the puncture of certain insects, bred in those fruits; but this is unphilosophical: a better account of the effect is obvious enough. The Fig-trees cultivated in that part of the world are such as produce only female flowers; the fruit of the *Caprificus*, thus hung upon their branches, produces only male flowers, and, Mr Tournefort tells us, it is open at the bottom, at the time it is hung on these trees: it is easy to see, therefore, that the ripening of the figs, after this process, is not owing to the punctures of insects, but to the supply of that male farina which they before wanted. The fact is obvious, though the manner in which it is effected is not so perfectly understood.

The other species of the Fig-tree are, 1. The hard-leaved Fig, with robust, erect branches. 2. The dwarf Fig, or *Chamæficus*. 3. The Malabar Fig, with cuspidated leaves, and small, round, double fruit. 4. The roundish-leaved Bengal Fig, with orbicular fruit. 5. The small, round, white-fruited Fig. 6. The oblong, bluish-fruited Fig. 7. The mulberry-leaved Portugal Fig. 8. The Goa Fig-tree, with quince-like leaves, and a small fruit. 9. The American, chestnut-leaved Fig, with a small, spotted, round fruit. 10. The great, citron-leaved, American Fig-tree, with a large, umbilicated fruit. 11. The bay-leaved American Fig-tree, with very large fruit. 12. The dactyloide American Fig, with leaves silvery underneath: and, 13. The Cyprian Fig of J. Bauhine: or, The wild Fig, with an undivided, lightly serrated leaf.

Beside these, which are distinct species of the *Ficus*, Tournefort has mentioned a great many others as such, which are truly no more than varieties, and their difference chiefly in the colour of the fruit. The white, the green, the red, the purple, the yellow, and the black Fig are of this kind, all raised, by culture, from the first species, and influenced by it, sometimes, to change their shape, as well as colour, though the leaves and every other part of the tree remain unaltered.

OPHIOGLOSSUM.

OPHIOGLOSSUM is a genus of plants, no part of the fructification of which is visible, except the fruit. This is an oblong, double, or distichous capsule, divided, by a great number of transverse articulations, into many cells, each of which, when mature, opens transversely, and is found to contain a great number of small seeds, of a subovate figure.

I. *Ophioglossum fronde ovata.*

The ovated-leaved Ophioglossum.

Adder's-tongue.

The root of this little plant is a large tuft of fibres, thick, and sufficiently long; the taste of them is sweetish at first, but afterwards acrid and bitterish. From this root, there

there rises a single pedicle of three or four inches long, green and succulent; this supports a single leaf of an ovated figure, with no visible nerves or veins in it, very thick and fleshy, and of a beautiful bright green; this is sometimes shorter and rounder, sometimes longer and narrower. From the insertion of the pedicle arises the peduncle, sustaining the fructifications; these are arranged into a long common capsule, an inch and half, or more, in length, and a fourteenth of an inch, or not much more, in diameter; this terminates in a point, and is serrated as it were at both edges.

This is a native of England, and is common enough in damp pastures; it rises in April, and remains till June, when the whole plant decays, except the root, which lies deep, and is perennial. Caspar Bauhine describes what he calls three species of *Ophioglossum*; 1. The common one now described; 2. An angular-leaved one; and, 3. A roundish-leaved one. Mentzel describes three species also, beside the common one: 1. A large, acute-leaved one, with a double tongue. 2. A middle-sized, obtuse-leaved one, with a double tongue; and, 3. A very small, double-tongued kind. These, however, are no more than varieties of the common *Ophioglossum*, the capsule or spike of which is often bifid, and the leaves, as already observed, vary greatly in length and breadth. All Europe, so far as is yet known, affords only one species of *Ophioglossum*: but, in America, there are two distinct species, beside the common European kind. I have received both from Pennsylvania. Plumier also has described both: the first is the reticulated, heart-shaped, leaved *Ophioglossum*; the other, the palmated *Ophioglossum*; both evidently real distinct species.

Tournefort makes eight species of *Ophioglossum*, but he does it by taking the varieties of C. Bauhine and Mentzel for species.

Ophioglossum has long been famous as a vulnerary, but it is more used by the good women in the country than in the shops. An ointment is made of it, with lard or butter; and its juice, or the powder of the dried leaves, is given internally.

OSMUNDA.

OSMUNDA is a genus of plants, of which no part of the fructification is distinctly visible, except the fruit. This is a globose, distinct capsule, many of which are arranged together in clusters, and which, when mature, open horizontally, and are found to contain a great number of very minute seeds, of an ovated shape.

1. *Osmunda scapo paniculato polyphylo.*

The paniculated, many-leaved Osmund.

Osmund Royal.

The root of this species is composed of a vast number of thick fibres, variously implicated and interwoven, very long, and of a black colour. From this arise several stalks; each grows to three or four feet high, and is round, smooth, striated, and of a green colour in the tenderer parts. The stalk divides into several branches, on each of which there stand eight, nine, or ten pair of foliola, making a pinnated leaf, terminated by an odd foliole at the extremity. The folioles are not serrated at the edge; they are of a pale green colour, and have an almost infinite number of very small and fine veins in them. The upper part of the common pedicle, or stalk, is divided into a number of ramifications of an inch or two in length, which are covered with a vast number of capsules of seeds.

This species is a native of England, and is not uncommon on our boggy grounds, and in damp woods. Tournefort calls it, *Osmunda vulgaris*; and C. Bauhine, *Filix ramosa, non dentata, florida*.

2. *Osmunda frondibus pinnatis foliolis semipinnatifidis, scapo nudo disticho.*

The pinnated Osmund, with semipinnatifid leaves, and a naked, distichous scapus.

This is an extremely elegant fern; it grows to eighteen or twenty inches in height. Its root consists of a vast cluster of intricately interwoven black fibres, considerably thick, and of a very disagreeable taste. Four or five plants of it usually arise from

from each root. Each plant consists of a single leaf, the petiole of which rises naked for five or six inches; it then sends off a number of branches, and each of these is furnished with a double series of oblong leaves, or foliola, between every two of which there runs a small, narrow membrane. The stalk toward the top has a long and deep furrow running all the way up it; the upper part of it is very thickly beset with seed-vessels. The folioles are all of them narrow, but most of all those which have seed-vessels on them, the edges of all these turning inwards.

This is a native of many parts of Europe and America, but not of England. It throve very well in the late Lord Petre's garden. Ray calls it, *Lonchites Norwegica major*, App. 68. C. Bauhine, *Filix palustris altera fusco pulvere hirsuta*, Pin. 358. Ammon, *Filicium septentrionale et palustre*, Rut. 175. Thalius, *Strictheopteris*, Herc. 119, and Muntingius, *Strictifera*, Phyl. 291. It is frequent in Norway and Denmark, and in the northern parts of Russia.

3. *Osmunda scapo caulino unico fronde pinnata solitaria.*

The single-stalked Osmund, with a single, pinnated leaf.

Woonwort.

This is a very singular and very beautiful plant. It grows to six or eight inches high. The root is fibrous and perpendicular, black on the outside, and yellow within; from this rises a single pedicle, which grows up naked to three or four inches, and is round, and moderately thick: at about this height grows a single pinnated leaf, of an inch and half long; it is composed of four or five pairs of folioles, with the end terminated by an odd one; each of the folioles is narrower at the base, and from thence extends into a kind of semicircular figure, so as to represent a half-moon. These leaves are thick, succulent, and fleshy, with no visible fibres. From the ala or insertion of this leaf grows a stalk of an inch and half, or more, in length. From the sides of this arise peduncles covered with seed-vessels, and making a very elegant appearance.

This species is a native of England, but it is not common. I have found it on Lincoln-heath, and in some other places. C. Bauhine calls it, *Lunaria racemosa minor et vulgaris*. Tournefort, *Osmunda foliis lunatis*.

Authors have described no less than five species of this plant, under the name of *Lunaria*. C. Bauhine describes one under the name of *Lunaria minor rutaceo folio*, Pin. 355. Breynius, another under the name of *Lunaria racemosa minor matricariae folio*, Cent. 184; and Morison, a third under the name of *Filicula five adiantum foliis inferioribus coriandri, cæteris rutæ murariæ five fumaris*, Hist. 3. p. 585; and, finally, Breynius, another under the name of *Lunaria racemosa minor adianti folio*, Cent. 1. 93.

All these, however, are no more than varieties of the common kind, as appears both from specimens of them, and even from the descriptions of the authors themselves. If we could reduce the varieties to their proper species, through the whole history of plants, as easily and as certainly as may be done in case of this species, how much would the vast number of supposed species, at present described by authors, be reduced? From more than seventeen thousand, 'tis a question, whether there would remain ten thousand?

The other species of *Osmund* really distinct are, 1. The hairy, spleenwort-leaved, American *Osmunda*. 2. The great, fern-leaved, American *Osmund*. 3. The hart's tongue-leaved *Osmund*. 4. The crenated-leaved *Osmund*. 5. The deeply laciniated and lightly-hairy *Osmund*. 6. The asphodel-rooted *Osmund*. 7. The verticillate *Osmund*; and, 8. The lanceolated and lightly serrated *Osmund*. Almost all these are of American origin, and are described by Plumier.

The common *Osmund* has the credit of being an excellent vulnerary, and a cure for the rickets.

P T E R I S.

PTERIS is a genus of plants, in which the fructifications are disposed in form of a line, surrounding the edges of the lower side of the leaves.

This is an extremely elegant fern; it grows to eighteen or twenty inches in height. Its root consists of a vast cluster of intricately interwoven black fibres, considerably thick, and of a very disagreeable taste. Four or five plants of it usually arise from

1. Pteris

1. *Pteris fronde supradecomposita, foliolis pinnatis, pinnis lanceolatis, infimis pinnatifidis, superioribus minoribus.*

Female
fern.

Decomposed, pinnate, small-leaved Pteris.

The length of this specific name, incapable of being shortened by Linnæus, and acquiesced in by Van Royen, and all that have followed him, may serve to shew how very intricate a class of plants the ferns are, and how difficultly distinguishable from one another. The root of this species creeps under the surface to a vast distance. The plant arises to four or five feet high. The stalk is naked to three feet, or thereabout; it is hollow, tender, and green: at this height it sends out a number of branches, which divide themselves into others, and those yet again into others. The foliola, which invest these, are small, and even at the edges, obtusely pointed, and arranged in the pinnated manner, a single or odd leaf closing the end of the pinna. The foliola are green on the upper side, and greyish underneath. This species is too common both in England, and every other part of Europe; our common people call it Brakes; and the botanical writers, Female fern. C. Bauhine calls it, *Filix ramosa major pin-nulis obtusis, non dentatis.*

2. *Pteris fronde pinnatifida lanceolata laciniis parallelis integerrimis.*

Rough
Spleen-
wort.

The pinnatifid, lanceolated Pteris, with parallel laciniæ.

This is a very elegant plant, and extremely different from the former species in it's general form, though perfectly like it in it's generical character. It's root is composed of a vast number of fibres, collected into a tuft; they are black on the outside, and whitish within; from this arise a vast number of leaves, fifty or more in a cluster. Each of these is an entire plant, it grows to a foot in height; the stalk is black at the bottom, and green higher up: the leaf begins to expand at about four inches from the base, and is one single pinnated one, broadest near the middle, and terminating in a point. The segments or lobes stand horizontally, and are very different from one another in shape. Those on the lower part of the leaf are broad, and obtuse, like those of the common asplenium; the others, up to the top of the leaf, resemble those of polypody, but are longer, narrower, and pointed at the ends. The longest of these segments is scarce an inch in length, and they are all entire and undivided at the edges. The leaves which produce the seeds usually rise in the midst of a cluster of these, and their segments appear longer and narrower than those of the others; but this is merely owing to the fructification.

This species is a native of England; and in France, and almost every other part of Europe, it is very common. It has generally been esteemed a species of polypody or lonchitis, but erroneously. C. Bauhine calls it, *Lonchitis minor*, Pin. 359. Camerarius, *Lonchitis aspera minor*, Epit. 669. Haller, *Struthiopteris*. Tournefort calls it, *Polypodium angustifolium, folio vario*, 540.

The common female fern is esteemed an excellent medicine in cases of worms; and the latter species is not less celebrated, as a vulnerary: but at present they are neither of them used in the shops.

LONCHITIS.

LONCHITIS is a genus of plants, the fructifications of which are arranged into lunulated series, and disposed separately under the sinus's of the leaves.

1. *Lonchitis petiolo strigoso spinofo.*

The Lonchitis, with a slender, prickly stalk.

The root is black, fibrous, and tough: the stalks are numerous, slender, rounded, but with a furrow in the front, and surrounded with weak prickles of a glossy black. The plant grows to a foot and half high: the alæ, which arise from the main stalk, are usually simple; sometimes they send off others near their bases; they are each
N n formed

formed of a single pinnatifid leaf. The segments are deep, the whole leaf broad and thin, and of a fine green; the seeds are arranged into little clusters of a lunated figure, and white colour, placed at the base of the sinuations, one to each. It is a native of Martinico. Plumier calls it, *Filix latifolia spinulis mollibus et nigris aculeata*.

2. *Lonchitis petiolo crassiore villosa.*

The thick and hairy-stalked Lonchitis.

The root is long and thick, knotty, and furnished with thick fibres. The plant rises to seven feet high: the stalk is an inch thick, round, but furrowed in the front, and hairy. The alæ are pinnatifid, five inches long, and about two broad, at the bottom. The segments are large, rounded, and crenated at the edge: they somewhat resemble the figure of the leaves of the oak. The seeds are arranged into lunated clusters, placed separately at the bases of the sinuations of the pinnae. It is a native of Martinico, and grows near waters. Plumier calls it, *Filix villosa pinnulis quercinis*.

ADIANTUM.

ADIANTUM is a genus of plants, the fructifications of which are collected into clusters, in form of oval spots, and placed on the under part of the tops of the leaves, or of the extremities of the segments, both which are always where the seeds are found, curled inwards.

1. *Adiantum fronde duplicato-pinnata foliolis semiorbiculatis sinuatis.*

The duplicate-pinnated Adiantum, with semiorbicular sinuated foliola.

True Maiden-hair.

This is a very beautiful little plant; it grows to six, eight, or ten inches high. The root is fibrose, and variously implicated, black on the surface, and white within; from this rise several stalks together. They are very slender, black, and of a shining surface; they grow up to half their height naked, but from that part to the top they send out on each side several pinnae, or small branches: these are not more than an inch or two in length, and are placed alternately at some distance on the main stalk. Each of these is regularly pinnated; there are about four foliola on each side, and one odd one at the end. These foliola are affixed to short petioles, and are of a semiorbicular figure, sinuated at the edges, and the segments, or short lobes formed by the sinus's, are roundish. The whole leaf or foliole is of a pale green colour, smooth on the surface, and soft to the touch.

This species is not a native of England; but in many places in France, and in other parts of Europe, it is common enough. J. Bauhine calls it, *Adiantum five capillus Veneris verus*, 3. 751; and C. Bauhine, *Adiantum foliis coriandri*; others, *Capillus Veneris verus*.

2. *Adiantum fronde ramosa diffusa.*

The branched, diffuse Adiantum.

American Maiden-hair.

The singular manner of growing in this plant is so obvious a distinction from all the other species of this genus, that scarce any thing more than it's name is necessary to distinguish it from all the rest. It is an extremely elegant plant. It's root is composed of a cluster of long black fibres, variously interwoven one with another; from this arise several plants together, five, ten, or more, in a cluster.

The stalk is round, of the thickness of a packthread, and of a fine shining black colour. This rises single to about six or eight inches high; at this height it immediately divaricates into two or three main ramifications, and, each of these immediately dividing into three or four more, the whole top of the plant forms itself into a ramose head: the several branches separate very widely from one another; some of them are erect, or nearly so; many horizontal, and some dependent; each extrem subdivision is from an inch to three inches in length, and elegantly pinnated. The foliola are of a very singular figure, oblong, obtusely pointed, strait on the lower edge, and rounded

rounded and sinuated on the upper; they do not stand in pairs, but alternately, on very short pedicles, and a single or odd leaf closes the extremity of the branch.

This species is a native of North America, but it succeeds very well in our gardens. The description here given of it is formed on one of the plants growing here: in Canada it grows to four or five feet high, and branches out in an extremely elegant manner. C. Bauhine calls it, *Adiantum fruticosum Brasilianum*, Pin. 355; and Cornutus, *Adiantum Americanum*, 7.

The other species of *Adiantum* are, 1. The red-stalked Scottish *Adiantum*; this was first found by Sibbald, who improperly divides it into two species, a larger and a smaller. 2. The little, pellucid, English *Adiantum*, with bifid or trifid leaves. 3. The hexagonal-leaved *Adiantum*. 4. The triphyllous, obtuse-leaved *Adiantum*. 5. The Italian *Adiantum*, with multifid leaves. 6. The flabelliform Chinese *Adiantum*. 7. The lichen-leaved *Adiantum*. 8. The creeping, shrubby, prickly *Adiantum*. 9. The finely divided *Adiantum*. 10. The capillaceous *Adiantum*. 11. The climbing *Adiantum*, with finely divided, obtuse leaves. 12. The extremely-branched, obtuse-leaved *Adiantum*. Most of these species are American, and not known to the world, otherwise than as described by Plumier, amongst his American ferns.

The first described species is the *Adiantum verum* of the shops: it is a famous pectoral, and makes a very pleasant syrup, called *Capillaire*; but an infusion of it, in manner of tea, succeeds better.

ASPLENIUM.

ASPLENIUM is a genus of plants, in which the fructifications are arranged into clusters, disposed in form of strait lines, and are placed under the disk of the leaf. This genus includes the *Asplenium*, *Lingua Cervina*, and *Trichomanes* of authors, the fructifications of all the species of every one of these supposed distinct genera being arranged in this manner.

1. *Asplenium fronde pinnatifida, laciniis alternis, adnatis.* Smooth
The pinnatifid-leaved *Asplenium*, with alternate laciniæ. Spleenwort.

This is a very small, but a very singular, plant. Its root is composed of a cluster of slender black fibres. From this arise ten, twelve, or more leaves, standing very close to one another. They are, at full growth, about three or four inches long, and half an inch, or a little more, in diameter. Every leaf is a complete plant: the pedicle arises naked a little way, but thence to the top it is pinnatifid. The lobes are small and short; they stand alternately on the stalk, and adhere, by their own broad base, without any pedicle. They are of a pale green colour, thick and succulent, and hairy on the under side; the extremity is closed by an odd foliole or segment. The lobes which form this leaf are not distinct and entire, as the foliola in many of the ferns, but they seem only segments of one general leaf.

This species is frequent in England on old walls, and in other barren places. C. Bauhine calls it, *Ceterach officinarum*, p. 354. J. Bauhine, *Asplenium*, five *ceterach*, 3. 749.

2. *Asplenium frondibus linearibus, integris, basi cordatis, inflexis, petiolis hirsutis.* Hart's
The linear-leaved *Asplenium*, cordated at the base with hairy Tongue.
pedicles.

The root of this species is composed of a multitude of long, slender, black fibres. The plants arise ten, twelve, or more, in a cluster. Each consists of a single, undivided leaf on its proper pedicle. The pedicle is black, hairy, and two or three inches long. The leaf is cordated at the base, and terminates in a point; it is six or eight inches long, and about an inch and half in breadth, of a fine green colour, and glossy surface; at the back of the leaves the fructifications stand in thick, short, oblique lines.

This species is very common in England in old wells, and other damp, shady places. C. Bauhine calls it, *Lingua cervina officinarum*. J. Bauhine, *Phyllitis* five
lingua

lingua cervina. Almost all the botanical writers have described it; and many of them, several times over, under the name of many distinct species. We are told of, 1. a *Lingua cervina maxima undulato folio auriculato per basin.* 2. A *Lingua cervina foliis in summo multifidis.* 3. A *Lingua cervina folio undulato crispo;* and 4. of a *Lingua cervina folio diviso crispo undulato:* but all these, and four or five others recorded as distinct species by Tournefort and others, are no more in reality, than varieties of the common hart's tongue described here, which sometimes grows larger, sometimes smaller, and has it's leaves sometimes divided at the top, sometimes curled at the edge.

3. *Asplenium fronde pinnata, foliolis subrotundis crenatis.* English
The pinnated *Asplenium*, with roundish, crenated foliola. Maidenhair.

This is a very beautiful little plant. It's root is composed of a cluster of slender black fibres; from this there rise a great number of the plants together. Each plant is simple and pinnated: the stalk is round, slender, black, and of a very glossy surface; it grows up naked, for an inch or two; after this it is, to the extremity, beset with a double series of beautiful folioles. The whole plant is usually five or six inches long, sometimes more. The foliola are of an oval figure, rounded at the end, and adhere to the stalk without any pedicle; they stand opposite, or nearly opposite, to one another, and the extremity of the stalk is terminated by a single leaf or foliolum. They are of a fine bright green colour, and smooth surface. The stalk is brittle.

This species is very frequent in England on old walls, and in other shady places. C. Bauhine calls it, *Trichomanes five polytrichum officinarum*, p. 356. J. Bauhine, *Trichomanes five polytrichum*, 3. 754; and others, *Trichomanes mas*, and *vulgare*.

The leaves or foliola of this species are sometimes even, sometimes serrated at the edges; and the plant grows sometimes larger, sometimes smaller, and is sometimes simple, sometimes divided into two or more parts at the extremity, like the *Phyllitis*.

Authors have described these several varieties of this species under the names of so many species. The *Trichomanes foliis eleganter incis*, of Tournefort; the *Trichomanes minus et tenerius*, of C. Bauhine; and the *Trichomanes ramosum* of the same, and other authors, are no other than the varieties of this species.

4. *Asplenium frondibus alternatim decompositis, foliolis cuneiformibus crenulatis.*
The *Asplenium*, with alternately decompound branches, and crenated, cuneiform leaves. Wall Rue.

This is one of the smallest of the fern-kind. It's root is composed of several fine and small black fibres, variously interwoven one with another. From this arise a great number of stalks or separate plants; these are seldom more than two inches in height, often not much more than an inch. The stalks are dusky coloured, or blackish, near the root, but higher up they are of a paler green; they are divided, toward the top, into many ramifications, and at the extremities of these, and on their sides, stand little leaves, in some degree, resembling those of the true *Adiantum* of the shops. The whole plant together has been supposed to resemble a leaf of rue, whence it's common name *Ruta muraria*. The leaves are thick and rigid, obtuse at the extremities, and crenated: they are of a pale green on the surface, and brownish underneath.

This species is frequent on old walls in England, and elsewhere. C. Bauhine calls it, *Ruta muraria*, p. 356. Tabernamontanus, *Adiantum album*, 796.

5. *Asplenium frondibus duplicato-pinnatis foliis inferioribus majoribus, foliolis obverse ovatis, superne crenatis.* Black
The ramosa *Asplenium*, with cordated foliola. Maidenhair.

The root of this species is composed of a cluster of black and considerably thick fibres; from this there rise usually six or eight leaves together. The pedicle is rigid, hard, and of a black colour, and shining surface; it grows up naked to five or six inches high, and then it sends off a number of branches, which stand regularly over-against

against one another, so as to give the whole compound leaf a kind of triangular form, by their growing shorter all the way toward the top. These branches are pinnated on each side: the pinnules or foliola are deeply sinuated, and sometimes they are subdivided into others; they are broadest at the lower part, and terminate in a point. The whole upper surface of the leaf is of a dark green colour, the under side is paler. This species is very frequent with us in woods, and other shady places, about the stumps of trees. C. Bauhine calls it, *Adiantum nigrum foliis longioribus pulverulentis pediculo nigro*, p. 355. J. Bauhine, and others, *Adiantum nigrum officinarum*.

This genus is a very extensive one. Every one of these five species has been made by most authors a peculiar genus, and several species are referable to each. Of the Ceterach-kind; there are, 1. The ramose Ceterach. 2. The tall, hairy Ceterach. 3. The procumbent Ceterach, with undulated leaves.

Of the *Lingua Cervina* kind, beside the varieties erroneously described as species, there are a vast number of really distinct ones. Plumier has described more than sixty distinct species, beside varieties only of American origin; and we have some others in Europe. The principal and most singular are of the European kind: 1. The spinose *Lingua Cervina*. 2. The ferrated *Lingua Cervina*. 3. The oak-leaved *Lingua Cervina*. Of the American: 1. The climbing, ilex-leaved *Lingua Cervina*. 2. The little, creeping, hairy *Lingua Cervina*. 3. The round-leaved *Lingua Cervina*. 4. The narrow-leaved *Lingua Cervina*, taking root at the ends of the leaves. 5. The bay-leaved, ferrated *Lingua Cervina*. 6. The scandent, citron-leaved *Lingua Cervina*. 7. The ensiform, ferrated *Lingua Cervina*. 8. The marginated *Lingua Cervina*.

Of the *Trichomanes* kind, beside the varieties already mentioned, there are several distinct species: 1. The aculeated-leaved *Trichomanes*. 2. The triangular, crenated-leaved *Trichomanes*. 3. The cordated-leaved *Trichomanes*. 4. The soft, pendulous *Trichomanes*. 5. The silvery *Trichomanes*.

Of the *Ruta Muraria* kind are, 1. The *Ruta Muraria*, called the curled, florid *Adiantum* of Swenkfeldt. 2. The tall *Ruta Muraria*, with narrower leaves. 3. The tall, various-leaved, climbing *Ruta Muraria*. 4. The thin-leaved, ferrated *Ruta Muraria*, a species not described, which I met with, many years since, on old walls, near Shepton Mallet.

Of the *Adiantum Nigrum* kind are, 1. The hemlock-like, black Maidenhair. 2. The black Maidenhair, with round segments. 3. The narrowest-leaved, black Maidenhair.

HEMIONITIS.

HEMIONITIS is a genus of plants, the fructifications of which are arranged into lines, sometimes branched, often uniting with and intersecting one another.

1. *Hemionitis frondibus lineari-lanceolatis integris.*

The Hemionitis, with undivided lineari-lanceolated leaves.

The root is oblong, thick, knotty and creeping, of a greenish colour, succulent and fibrated. The plant consists of a single leaf, of an oblong, narrow, and linear form. Its length is a foot and half, and its greatest breadth not more than an inch: it is very narrow at the base, and terminates in a long and narrow point at the extremity; its colour is a pale green, its consistence firm. The seeds are arranged in long series or lines, uniting with, and intersecting one another in several places, so as to form a kind of chain of oblong links, all along the two sides of the rib of the leaf. There usually grow several plants from the different parts of the same root: their pedicles are very short, and are tuberous at the bottom. It grows about the roots of trees in the Caribbee Islands. Plumier calls it, *Lingua cervina angustifolia reticulata*.

2. *Hemionitis frondibus palmatis petiolis hirsutis.*

The palmated-leaved, hairy-stalked Hemionitis.

The root is composed of numerous, slender, rigid, black fibres: the stalks are numerous, hairy, slender, and three, four, or five inches long; they are naked to the

top, where there stands a palmated leaf of two or three inches long, and as much in diameter: it is divided into five oblong segments, broadest at the base, pointed at the extremity, and crenated round the edges. Not unfrequently, when the plant is full grown, a young leaf, divided only into three segments, arises from a fissure in the old ones. The seeds are arranged in beautiful reticulated series on the back of the leaf. It is a native of many parts of North America. Plumier calls it, *Hemionitis aurea hirsuta*. Sir Hans Sloane, *Hemionitis folio hirsuto et magis dissecto seu ranunculi folio*. The whole leaf is indeed hairy, but much less so than the stalk.

POLYPODIUM.

POLYPODIUM is a genus of plants, the fructifications of which are arranged together into round spots, and placed on the under side of the disk of the leaves.

This genus includes the Polypodium and the Lonchitis of other authors, excepting for some species which they have arranged under these genera, which do not properly belong to them, such as the pinnatifid *Pteris* before described, which Tournefort has made a Polypody, and C. Bauhine a Lonchitis, but which properly is neither.

1. *Polypodium fronde pinnata, pinnis lanceolatis, indivisis, ferrulatis, alternis connato-fessilibus.*

Common Polypody.

The lanceolated and serrated-leaved Polypody.

The root of this species is as thick as a man's finger, very long, and runs horizontally along the surface of the ground; it is of a dusky colour, and hairy, and full of tubercles, from which it sends out little clusters of fibres. From this root, at several distances, there arise the leaves or distinct plants: each grows to be about a foot, or somewhat more, in height. The pedicle is naked for about five inches, and from thence to the top stand the pinnæ; they are largest at the bottom, and smaller all the way to the top; they are about an inch in length at a medium, and about a third of an inch in breadth, of a dark green colour, and, when in the state of fructification, beautifully spotted, with yellow dots underneath.

This species is frequent with us on old walls, and under shady hedges. C. Bauhine, and most of the other writers, call it *Polypodium vulgare*.

The pinnæ, in this species, are usually a little notched; when the plant grows in damp places, they are scarce at all so; when in dry ones, they are somewhat deeply serrated; from this variety, Petiver, Ray, Barreliere, and some others, have made two species; 1. The common Polypody; and, 2. The Polypody of the wall, with serrated leaves.

2. *Polypodium fronde pinnata, pinnis lineari-lanceolatis.*

The pinnated Polypody, with lineari-lanceolated pinnæ.

This is the most pompous and elegant of all the Polypodies. It grows to three or four feet high. Its root is an inch in diameter, and creeps just under the surface of the earth to a great distance. The stalk is round, of a pale green colour, rigid and firm; it runs up naked to the height of two feet, from that to the top. It is regularly pinnated. The pinnæ are longest and largest at the bottom, and smaller all the way up. The lowest of them are eight or ten inches long, and near two inches broad; they are of a pale bluish-green colour. The fructifications make large and beautiful round, yellow dots on the under parts of the disk of the pinnæ.

This species is a native of America. Lord Petre had it in great perfection in his garden. Plumier, and others, have described it under the name of *Polypodium majus aureum*.

3. *Polypodium fronde duplicato-pinnata, foliolis obtusis, crenulatis, petiolo strigoso.*

The duplicato-pinnate Polypody, with obtuse, crenated leaves, and slender stalks.

Male
Fern.

This is a very common plant: it rises to two feet, or more, in height, and, in the broadest part, is often near a foot in diameter. Its root is thick and tuberous; its stalks, when they first appear, are naked of leaves, but hairy, and very oddly contorted. They are brittle, greenish, and covered, toward the base, with a chaffy matter. The leaves are beautifully pinnated: on the ribs which issue from the stalks, the pinnæ stand alternately, not in pairs, and they are placed at a greater distance than in many other of the species. They are of a dusky green colour, and are spotted on the under part of the pinnæ, in the same manner as the common Polypody, when in the state of fructification. This species is very common with us, under hedges, and in woods. C. Bauhine calls it, *Filix ramosa, non dentata*. Most of the authors have called it, *Filix mas vulgaris*, the common male Fern.

4. *Polypodium duplicato-pinnatum, foliolis ovato-acutis crenulatis.*

The duplicately-pinnate Polypody, with ovated, acute, and crenulated leaves.

Dryop-
teris.

The root of this species is composed of a number of long flagellæ, which creep just under the surface, or even upon it, and intangle variously with one another. They are of the thickness of a goose-quill, and six, eight, or ten inches long: they are black on the outside, whitish within, and of an austere taste, with some sweetness. From the several parts of these flagellæ there are sent great numbers of capillary fibres into the ground. The plants also arise, at different distances, singly, or two or three together. It grows to six or eight inches high; the stalk rises naked, three or four inches: it is greenish and slender. From this part to the top it is duplicately pinnated: it sends off, on each side, several stalks, or pinnæ, which are themselves also pinnated, or beset with small leaves, placed opposite to one another, in pairs, and adhering to the stalks by a broad base: there are eight, nine, or ten pair of these on the lower pinnulæ, but fewer on the upper ones, as they grow smaller and shorter all the way up: every pinnula has an odd leaf at the end. The stalk is flat on the anterior surface, rounded behind, and is smooth and brittle. The leaves are of a pale whitish, or yellowish-green, and are very thin and tender.

This species is frequent in the boggy parts of England, as in the Isle of Ely, &c. J. Bauhine calls it, *Filix minor, non ramosa*. Ray, *Filix minor, palustris*, Hist. 1. 146. The generality of other authors call it *Dryopteris*.

The other species of Polypody are considerably numerous: of those usually called Polypodies by authors the principal are, 1. The sensible Polypody of Muntingius. 2. The lacinated Polypody of Wales. 3. The great, finely-divided, African Polypody. 4. The black, finely divided Polypody. 5. The pendulous, hairy, reddish Polypody. 6. The ostrich-feather Polypody. 7. The pellucid Polypody. 8. The serrated Polypody, with a blue root. Of those called by some authors Ferns, and by others Lonchitis, the principal are, 1. The greater, rough Spleenwort, or Lonchitis. 2. The spinose, auriculated Fern. 3. The narrower-leaved, closer-set, prickly, and auriculated male Fern. 4. The smaller, prickly male Fern, called, by Ray, *Filix lonchitidi affinis*. 5. The male Fern, with narrow, deeply-ferrated, and thin-set leaves. 6. The pale-stalked, brittle Dryopteris, with the lower alæ bending downwards. 7. The dwarf, stone Fern, spotted with black dots. 8. The auriculated Lonchitis, with dentated pinnules. 9. The smaller, round, crenated Lonchitis. 10. The betony-leaved Lonchitis. 11. The ramose Lonchitis, with dusty stalks. 12. The small, branched Lonchitis.

Of the Dryopteris kind are the small, fountain Fern of J. Bauhine, and a small, extremely narrow, pinnuled kind, not described by any other author, a native of Pennsylvania.

The root of the common Polypody is much esteemed as a purge, and is an ingredient in some of the shop compositions. The root of the male Fern is greatly recommended by some against the rickets in children, and the leaves of the Dryopteris have the credit of being pectoral: they are sold in our markets under the name of White Maidenhair, and used as such in the shop compositions.

ACROSTICUM.

A CROSTICUM is a genus of plants, in which the fructifications are collected into clusters, and cover the whole under surface of the leaves.

Linnaeus, in his Genera Plantarum, makes this genus include the Acrosticum of authors, and the ruta muraria of Tournefort and others; but, in his Flora Suecica, &c. he arranges the ruta muraria, as we have done, among the species of asplenium. It is certain that the fructifications of the ruta muraria do, like those of the acrosticum, cover the whole under surface of the leaves; but they are not disposed in an irregular cluster there, but are formed into lines, as in the asplenia.

1. *Acrosticum fronde lineari-laciniata.*

The linear-laciniated Acrosticum.

This is one of the most singular plants we are acquainted with. Its root is composed of a vast number of capillary, blackish fibres; from this there arise a number of stalks, in a cluster often not less than forty or fifty together. The plant is about three inches high. The stalks are extremely slender, of a dusky colour toward the bottom, but pale upwards. Toward the top they are each divided into two or three segments, somewhat broader than the rest of the stalk, and covered with a dusty, ferrugineous-coloured powder. This is formed of the fructifications of the plant, and has much the appearance of that on the back of the leaves of the ruta muraria. The extremities of this plant usually are bent a little downwards.

This species is very common on the rocks in Germany, and we have it also in Scotland. It usually grows out of the fissures of stones, or from between the joints of old walls. C. Bauhine calls it, *Filix saxatilis corniculata*; and Tournefort, *Filicula saxatilis corniculata*.

The only species we know of this genus, beside that just described, is the tall, digitated Acrosticum of America, which Plumier calls *Filicula digitata*.

TRICHOMANES.

T RICHOMANES is a genus of plants, in which there appears a turbinated, erect calyx, standing singly on the very margin of the leaf, and a setaceous style terminating the capsule.

1. *Trichomanes fronde supra composita petiolo hirsuto.*

The hairy-stalk, supra decampound-leaved Trichomanes.

The root is fibrous and black. The plant rises to two feet high, or more; its main stalk is round, hairy, and of the thickness of a goose-quill; this divides into a multitude of ramifications and subdivisions, so that the whole extends to a foot, or more, in breadth: all these ramifications of the stalk are slender, round, and of a glossy black. The leaves stand alternately; they are an inch long, about a third of an inch broad, and of a lanceolated figure, deeply cut in on the edges: at the extremities of the several segments, which are all hollowed like a cup for that purpose; there stand a kind of capsules, covered by an operculum, from which there runs out a long rigid hair. It is a native of St Domingo. Plumier calls it, *Adiantum scandens ramosissimum lacimis retusis dissectum*. It grows on the barks of old trees.

2. *Trichomanes*

2. *Trichomanes fronde pinnatifida, segmentis crenulatis.**The pinnatifid Trichomanes, with crenated segments.*

The root is oblong, creeping, thick and fibrated. The plant consists of a single leaf, pinnatifid, and somewhat resembling the common polypody, but that the segments are deeply crenated. The pedicle is naked to about the height of three inches; the whole plant is about a foot high, and more than two inches broad in the middle; the extremities of the segments are hollowed into a kind of cup, in which stand clusters of the seed-vessels, covered with an operculum terminated by long hair. It is a native of Martinico, Plumier calls it, *Polypodium crispum calyciferum*.

3. *Trichomanes fronde decomposita capsulis rarioribus.**The decomposed-leaved Trichomanes, with four capsules.*

The root is of the thickness of a packthread, hairy, creeping, and furnished with a number of fibres. The plant grows to four or five inches high, and is very tender and delicate. The stalk is flat, the leaf decomposed, and divided toward the extremities into long, narrow, and obtuse segments. The capsules are large, and covered with an operculum furnished with long hair: they are few in number, and are not placed as in the others, at the extremities of all the segments, but principally toward the bases of the leaves. It is a native of many of the Caribbee Islands. Plumier calls it, *Filicula Vyscidifera*.

